>>

World Uranium Mining

(*July 2008*)

- **Over half of the world's production of uranium from mines is from Canada, Australia and Kazakhstan.**
- **An increasing proportion is produced by in situ leaching.**
- **After a decade of falling mine production to 1993, output has generally risen since then and now meets 64% of demand for power generation.**

Canada produces the largest share of uranium from mines (23% of world supply from mines), followed by Australia (21%) and Kazakhstan (16%). Australian and Canadian production was depressed in 2006 due to particular problems but Australia recovered in 2007.

Production from mines (tonnes U)

Country	2002	2003	2004	2005	2006	2007
Canada	11604	10457	11597	11628	9862	9476
Australia	6854	7572	8982	9516	7593	8611
Kazakhstan	2800	3300	3719	4357	5279	6637
Russia (est)	2900	3150	3200	3431	3262	3413
Niger	3075	3143	3282	3093	3434	3153
Namibia	2333	2036	3038	3147	3067	2879
Uzbekistan	1860	1598	2016	2300	2260	2320
USA	919	779	878	1039	1672	1654
Ukraine (est)	800	800	800	800	800	846
China (est)	730	750	750	750	750	712

South Africa	824	758	755	674	534	539
Czech Repub.	465	452	412	408	359	306
Brazil	270	310	300	110	190	299
India (est)	230	230	230	230	177	270
Romania (est)	90	90	90	90	90	77
Pakistan (est)	38	45	45	45	45	45
Germany	212	150	150	77	50	38
France	20	0	7	7	5	4
Total world	36 063	35 613	40 251	41 702	39 429	**41 279**
tonnes U_3O_8	42 529	41 998	47 468	49 179	46 499	48 680

WNA Market Report data

Mining methods have been changing. In 1990, 55% of world production came from underground mines, but this shrunk dramatically to 1999, with 33% then. From 2000 the new Canadian mines increase it again, and with Olympic Dam it is now around half. In situ leach mining has been steadily increasing its hare of the total.

In 2007 production was as follows:

conventional underground & open pit	62%
in situ leach (ISL)	29%
by-product	10%

(considering Olympic Dam as by-product rather than in underground category)

In the 1990s the uranium production industry was consolidated by takeovers, mergers and closures. In 2007, seven companies marketed 85% of the world's uranium mine production:

Company	tonnes U	%
Cameco	7770	19
Rio Tinto	7172	17
Areva	6046	15
KazAtomProm	4795	12
ARMZ	3413	8
BHP Billiton	3388	8
Navoi	2320	6
Uranium One	784	2

GA/ Heathgate	673	2
other	4919	12
Total	41,279	100%

The largest-producing uranium mines in 2007 were:

Mine	Country	Main owner	Type	Production (tU)	% of world
McArthur River	Canada	Cameco	underground	7199	17
Ranger	Australia	ERA (Rio Tinto 68%)	open pit	4589	11
Olympic Dam	Australia	BHP Billiton	by-product/ underground	3388	8
Kraznokamensk	Russia	ARMZ	underground	3037	7
Rossing	Namibia	Rio Tinto (69%)	open pit	2583	6
Arlit	Niger	Areva/Onarem	open pit	1750	4
Rabbit Lake	Canada	Cameco	underground	1544	4
Akouta	Niger	Areva/Onarem	underground	1403	3
Akdala	Kazakhstan	Uranium One	ISL	1000	2
Zafarabad	Uzbekistan	Navoi	ISL	(est) 900	2
McClean Lake	Canada	Areva	open pit	734	2
Beverley	Australia	Heathgate	ISL	634	1.5
Top 12 total				28,760	70%

New Mines

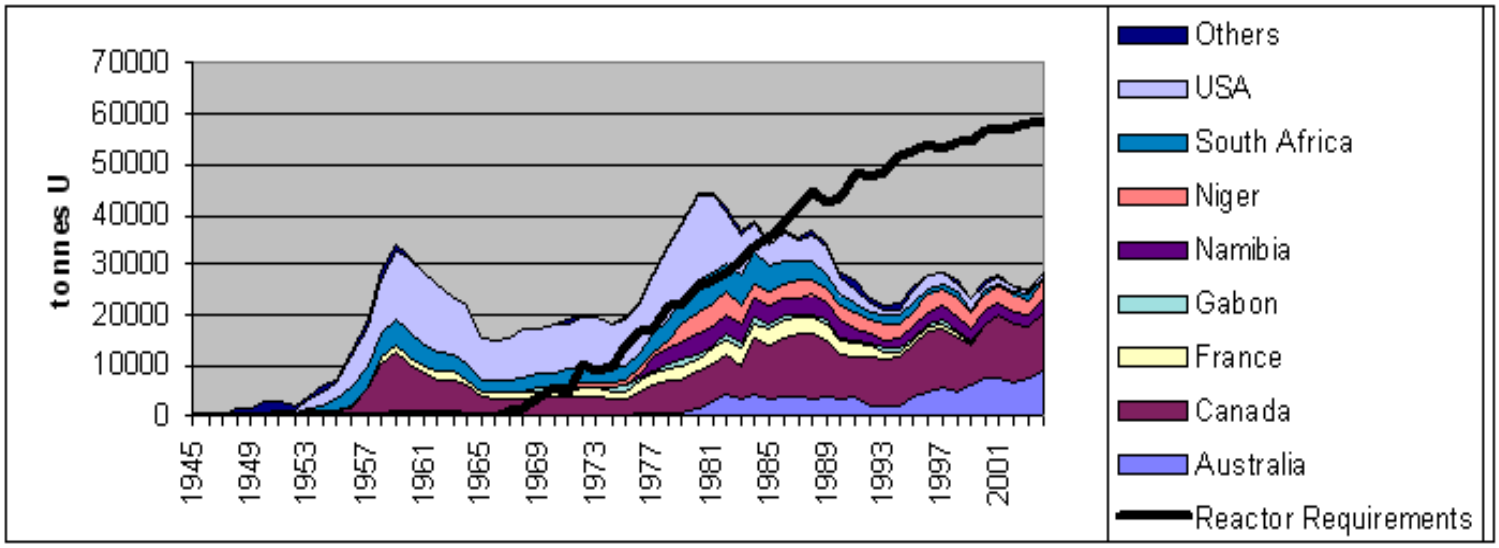
Canada has two major mines likely to come into production in 2011: Cameco's **Cigar Lake** underground mine is being developed for 2011 start-up. It will truck ore for treatment at McClean Lake and Rabbit Lake mills, 70 km away, eventually to produce 7000 tU/yr. Areva's **Midwest** mine is smaller, with ore being milled at McClean Lake nearby, to produce 2200 tU/yr. With these operating, Canadian output could be substantially be concentrated at two mills: McClean Lake producing about 7800 tU and Key Lake 7000 tU per year, with about 3300 t/yr coming from Rabbit Lake. *(See also Information Paper on Canada).*

In Australia there are plans to triple the uranium output of Olympic Dam, to about 12,700 tonnes U per year, and two smaller ISL mines are due to start production by about 2010. *(See also Information Paper on Australia).*

In Kazakhstan a number of ISL mines are due to start over the next few years, taking Kazakh uranium production to about 15,000 tU per year by 2010.

With the recovery of uranium prices since about 2003, there is a lot of activity in preparing to open new mines in many countries. The WNA reference scenario projects world uranium demand as about 74,000 tU in 2015, and most of this will need to come directly from mines (in 2007 36% came from secondary sources).

Western World Uranium Production and Demand 1945-2004



Source:World Nuclear Association

Sources:
World Nuclear Association